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ALBERT FREDERICK HILL
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RALPH CARLETON BEAN
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CARROLL EMORY WOOD, JR.

} Associate Editors

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PHYTOGEOGRAPHIC STUDIES IN ONTARIO

1. THE GENUS *UVULARIA* IN SOUTHERN ONTARIO

JAMES H. SOPER¹

WHEN the preliminary check list of the flora of southern Ontario was being compiled (12), it was found necessary to verify the occurrence in that area of a number of species which had been known earlier but not collected nor reported within recent years. Among these was one of the Bellworts, *Uvularia perfoliata* L., a species frequently confused with *Uvularia grandiflora* J. E. Smith, the more common plant in our region.

According to Anderson and Whitaker (1), *Uvularia grandiflora* is the more widespread and the more western of these two species, occurring from Quebec and New England to Wisconsin and south to Missouri, whereas *U. perfoliata* shows a distribution along the Alleghany mountains and the coastal plain from New England to Georgia, with an extension westward to western New York and Pennsylvania in the Lake Erie region. On their map (loc. cit., p. 38, fig. 5) are shown six stations for *U. grandiflora* in Canada (southern Quebec and eastern Ontario, but none in southwestern Ontario) and only one for *U. perfoliata* on the Niagara peninsula of southwestern Ontario.

A study was therefore undertaken to determine more fully the distribution of these species in Ontario. An examination was made of herbarium specimens and living plants were studied in the field during the past summers' field work on the flora of southern Ontario. In May, 1950, an unreported station for the rare *U. perfoliata* was located in the Niagara district, and in

¹ Assistant Professor of Botany and Curator of the Herbarium of Vascular Plants, Department of Botany, University of Toronto, Toronto, Ontario.

May, 1951, a second station was discovered in the vicinity of Hamilton. The scope of the study was broadened to include the related species, *U. sessilifolia*, and its distribution will also be discussed.

DESCRIPTION AND DISCUSSION OF SPECIES

Uvularia is represented in Ontario by three species, viz. *U. grandiflora* J. E. Smith, *U. perfoliata* L., and *U. sessilifolia* L. The last of these, *U. sessilifolia*, is quite distinct and easily recognized by its elongate rhizome, its sessile (but not perfoliate) leaves, and its ellipsoid capsule. By some authors it has been placed in a separate genus (*Oakesia* S. Watson; *Oakesiella* Small), but in view of the cytological evidence presented by Anderson and Whitaker (1) such a treatment seems artificial.

The other two species, *U. grandiflora* and *U. perfoliata*, are more alike, both of them having a short rhizome, perfoliate leaves, and a truncate capsule. They have been confused by many collectors and, unless it is possible to locate verifying specimens, most reports of these species in the early literature must be considered with some doubt. The morphological differences between *U. grandiflora* and *U. perfoliata* have been studied in great detail by Anderson and Whitaker, who applied a statistical analysis. They have also been pointed out by C. C. Deam (2), by M. L. Fernald (4), and by Wiegand and Eames (13). The main differences are summarized below.

Uvularia grandiflora.—This species is usually larger and somewhat more branched and more leafy than the second. The plant is not glaucous but the leaves are whitish-pubescent beneath. The inner surface of the perianth-segments is smooth, not granular-roughened, and the stamens exceed the style.

Uvularia perfoliata.—This species is generally smaller than the first, with a somewhat less branched and less leafy habit. The leaves are glaucous and glabrous. It can be distinguished readily by the presence on the inner surface of the perianth-segments of a number of small, but clearly visible, granular or papillate projections. The stamens are shorter than the style.

It will be seen from the summary given above that some of the differences between these two species are of a qualitative nature. The character of the inner surface of the perianth, however, is usually definitive. On the basis of measurements of the size and

shape of leaves and of other characters, Anderson and Whitaker concluded that the two species could always be separated by a combination of characters if a single character did not suffice. It was also pointed out that the two species occupy largely distinct natural areas in North America and that where overlapping does occur, they are found in different habitats within the same general area. This was also found to be true in the present study with respect to the habitats occupied in southern Ontario.

Wiegand and Eames (13) called attention to the difference in the flowering dates of the two species in question. This difference is also apparent in Ontario, although the data are few for *U. perfoliata* because of its rarity. The average date of flowering for *Uvularia grandiflora* in Ontario is May 15th (based on 81 collections); for *Uvularia perfoliata* it is May 30th (based on 7 collections). Thus, in spite of the fact that *U. perfoliata* is found only in the extreme southern part of the province where the growing season opens earliest, its flowering date is about two weeks later than that of *U. grandiflora*.

KEY TO THE SPECIES OF UVULARIA IN ONTARIO

- A. Leaves perfoliate; rhizome short; capsule obovoid, truncate, three-lobed or angled, but not winged.....B.
- B. Plant not glaucous, leaves usually whitish-pubescent or puberulent beneath; inner surface of perianth-segments smooth, not granular-roughened; stamens exceeding the style.....1. *U. grandiflora*.
- B. Plant glaucous and glabrous; inner surface of perianth-segments bearing some small, but clearly visible, granular or papillate projections; stamens shorter than the style.....2. *U. perfoliata*.
- A. Leaves sessile but not perfoliate; rhizome elongate; capsule ellipsoid, tapering at each end, with three winged angles.....3. *U. sessilifolia*.

DISTRIBUTION OF SPECIES

The distribution of the three species of *Uvularia* has been plotted on outline maps of southern Ontario (see figs. 1, 2, 3) on the basis of the specimens examined in the field and in the herbaria, together with any published or unpublished reports that were considered authentic. Specimens have been cited under each species to give records for the counties and districts of Ontario, but many which are nearly duplicates or merely additional records from the same county have been omitted.

Symbols and Abbreviations.—Four types of symbols have been used to distinguish the different kinds of records on the maps. The locations of collection of specimens examined in the herbarium are shown as black dots; those for plants examined by the author in the field but not collected—as open circles; published reports considered authentic—as solid triangles; and “other records” such as personal communications, both oral and written, from other collectors, when the information seemed credible on the basis of the known distribution—as open triangles.

The following are the abbreviations used to designate the herbaria from which specimens² were examined: BUF—Buffalo Museum of Science, Buffalo, New York; CAN—National Museum of Canada, Ottawa, Ontario; DAO—Division of Botany, Department of Agriculture, Ottawa, Ontario; FFT—Faculty of Forestry, University of Toronto, Toronto, Ontario; MT—Montreal Botanical Garden, Montreal, Quebec; McM—McMaster University, Hamilton, Ontario; OAC—Ontario Agricultural College, Guelph, Ontario; QU—Queen’s University, Kingston, Ontario; TRT—Department of Botany, University of Toronto, Toronto, Ontario; WO—University of Western Ontario, London, Ontario.

1. *Uvularia grandiflora* J. E. Smith—In Canada known from southwestern Quebec, southern Ontario (see fig. 1), [probably in western Ontario near the borders of Manitoba and Minnesota (but no specimens seen)], and southeastern Manitoba. It grows in deciduous woods, mixed deciduous and coniferous woods, along wooded banks of streams and slopes of wooded ravines, or occasionally in open rocky woodland. The following, from 163 sheets examined, are cited as county and district records:

ONTARIO: BRANT: New Durham, May 4, 1927, *R. F. Cain* (TRT). BRUCE: rich woods, Dyer’s Bay, June 29, 1936, *P. V. Krotkov 10412* (TRT). CARLETON: open rocky woodland, vicinity of Ottawa, May 8, 1946, *A. J. Breitung 2127* (DAO). DUFFERIN: Shelbourne, May 21, 1898, *Wm. Scott* (TRT). DUNDAS: Williamsburg, June 20, 1903, *E. J. Wells* (QU). DURHAM: low wet woods about one mile n. of Courtice, June 13, 1950, *Soper & Shields 4621* (TRT). ELGIN: rich woods, Aylmer, May 10, 1898, *R. T. Anderson* (TRT). ESSEX: woods, Sandwich, June 5, 1901, *J. Macoun* (CAN). FRON-

² Most of the abbreviations used are from the list compiled by J. Lanjouw (7). In the case of the Department of Agriculture, Ottawa, the abbreviation DAO is preferred to OTB, since the former is the one more generally used in publications by phanerogamic taxonomists of that Department. For the herbaria not listed by Lanjouw, tentative abbreviations have been assigned, some of which are in general use.

TENAC: Kingston, 1907, *F. J. Pound* (QU). GRENVILLE: Mirwin's woods, w. of Prescott, May 14, 1859, [*B. Billings?*] (QU). GREY: edge of wooded hillside about one mile s.e. of Meaford, June 7, 1950, *Soper & Shields 4608* (TRT). HALDIMAND: highland, two miles e. of Dunnville, May 17, 1951, *Bert Miller* (McM). HALIBURTON: Carnarvon, May 18, 1935, *R. C. Hosie* (FFT). HASTINGS: woods near Stoco, May 22, 1948, *A. J. C. Barry* (TRT). HURON: rich woods, Wingham, May & July, 1890, *J. A. Morton* (CAN). LAMBTON: oak-hickory woods, the Public Bush, Walpole Island, Aug. 4, 1950, *Soper &*



FIG. 1. *UVULARIA GRANDIFLORA* IN ONTARIO

Shields 5103 (TRT); open woods, [without exact locality], Moore Tp., May 1892, *Mrs. A. E. Gurd* (WO). LANARK: moist stream bank, Wolves Grove, lot 16, conc. VII, Ramsay Tp., May 23, 1939, *Senn & Minshall 1243* (DAO, MT). LEEDS: Jones' Falls, June 8, 1895, *ex herb. J. Fowler* (QU). LINCOLN: in woods along south side of Queen Elizabeth highway, lot 5, conc. I, Clinton Tp., May 17, 1950, *Soper & Shields 4358* (TRT); wooded ravine slope, near Beamsville, July 4, 1950, *Soper & Shields 4877* (TRT); woods along slope below escarpment about two miles s. of St. Catharines, June 18, 1950, *Soper & Shields 4717* (TRT). MIDDLESEX: beech-maple woods about three miles s.w. of Komoka, July 18, 1941, *J. H. Soper 2735* (TRT). MUSKOKA: Urquhart's Farm, Port Carling, May 17, 1940, *L. C. Coleman* (TRT). NORFOLK: ravine hillside, Turkey Point, June 3, 1938, *J. H. Soper 137* (McM). NORTHUMBERLAND: Cobourg, May 22, 1890, [collector not stated] (TRT). ONTARIO: between limestone blocks, open field, Atherley, May 24, 1949, *A. G. Edmund* (TRT). OXFORD: deciduous woods, about five miles n. of Thamesford, May 30, 1950, *Soper & Shields 4512* (TRT); in woods about one mile w. of Tillsonburg, June 26, 1950, *Soper & Shields 4815* (TRT). PEEL: Snelgrove, May 5, 1891, *Jas. White* (TRT). PERTH: damp maple-beech woods, lot 6, conc. IV,

Logan Tp., two miles n.e. of Mitchell, July 25, 1950, *J. K. Shields 212* (TRT). PRINCE EDWARD: rich open woods, Cressy, June 3, 1928, *J. Oughton* (TRT). RENFREW: Calabogie Lake, May 28, 1884, *ex herb. J. Fowler* (QU). SIMCOE: low wet woods, Thunder Beach, Georgian Bay, May 24, 1949, *Bruce Falls* (TRT); woods along bank of Nottawasaga River near its mouth, June 29, 1950, *Soper & Shields 4849* (TRT). VICTORIA: rich shady woods, Mt. Horeb, May 26, 1913, *N. C. Hart* (WO). WATERLOO: dry woods, Cressman's Wood, German Mills, May 6, 1939, *F. H. Montgomery 109* (McM, OAC). WELLAND: rocky woods, Niagara Glen, May 20, 1950, *Soper & Shields 4391* (TRT). WELLINGTON: woods, Arkell, May 15, 1933, *S. A. Simmons* (OAC). WENTWORTH: damp alluvial soil in wooded stream bed, between Waterdown and Aldershot (near Hamilton), May 22, 1951, *J. H. Soper 5164* (TRT). YORK: ravine slope at edge of woods, about one mile n. of Donlands Station, May 15, 1950, *Soper & Shields 4303* (TRT).

2. *Uvularia perfoliata* L.—This species is apparently restricted in Canada to the extreme southern part of Ontario, between the Niagara River and the western end of Lake Ontario (see fig. 2); it may possibly occur also in the southwestern part of Quebec. It is to be looked for in the Ottawa district and the eastern counties of southern Ontario. It grows in woods and thickets on upland sites, or on the slopes of wooded hillsides. The following sheets are cited from the twelve specimens examined from Ontario.

ONTARIO: LINCOLN: St. Davids, May 24, 1904, *Wm. Scott* (TRT); rich woods, Jordan Station, May 27, 1892, *J. Macoun* (CAN); south of St. Catharines, July 8, 1901, *J. Macoun* (TRT); thicket, Lincoln County [but without exact locality], June 3, 1906, *Wm. L. Putnam* (OAC). WELLAND: wooded ravine, between Fonthill and Ridgeville, May 22 & June 18, 1950, *Soper & Shields 4408 & 4712* (TRT); woods, Niagara, May 11, 1901, *J. Macoun* (CAN). WENTWORTH: dry upland woods, between Waterdown and Aldershot (near Hamilton), May 22, 1951, *J. H. Soper 5163* (TRT).

In addition to the above, a specimen was examined from the herbarium of Queen's University labelled "vicinity of Ottawa, May 1879, *M. Fletcher*" which is undoubtedly this species, but no other collections nor reports have been seen from that region. It may be assumed that the species once grew in the Ottawa district and is now either extinct there or so rare that it has escaped detection. An alternative possibility is that the information concerning the locality as given on the label is incomplete or inaccurate. J. M. Macoun reported in 1879 (9) that this species was known only from near Niagara and Jordan Station and stated that it was "very rare and not collected for many years." No

mention was made of the occurrence of *U. perfoliata* in the Ottawa district.

J. Fletcher, in his first check list for the Ottawa district published in 1879 (5, p. 58), listed all three species of *Uvularia* without specific localities. Later, in preparing the annotated edition of the Flora Ottawaensis, Fletcher (6, pp. 90–91) gave *Uvularia grandiflora* and *Oakesia sessilifolia* as common in the Ottawa district, but dropped *Uvularia perfoliata* from the list without comment.

Uvularia perfoliata was not known definitely to occur in Quebec by Louis-Marie (8), although it was later included in the Flore Laurentienne by Victorin (10) with the statement: "bois riches de l'ouest du Québec; rare." In a more recent paper by Raymond (11), in which many rare and southern species are listed for southern Quebec, *U. perfoliata* is not mentioned. If this species were abundant in the southwestern part of Quebec, the record for the Ottawa district or reports for eastern Ontario would seem more acceptable. Since such is not the case, it seems better to exclude the Ottawa record at least until verification or a more recent collection appears.

The restricted distribution of *U. perfoliata* in Ontario is difficult to explain in terms of the soil-preferences of this species. Accurate descriptions of habitat and associated species are lacking for all of the stations known to the author only through herbarium specimens. Only two stations for this species have been discovered and studied in Ontario by the author. Several writers have indicated that *U. perfoliata* is a plant of "acid to circumneutral soils" (4, p. 429) or "sterile gravelly or sandy, acid or subcalcareous soils" (13, p. 143). Likewise, *U. grandiflora* is said to occur in "rich woods and thickets, chiefly calcareous" (4, p. 429) or "in gravelly or alluvial calcareous rich soils" (13, p. 144). It seems probable that the same general statements can be applied to these two species in Ontario, but with only two stations for *U. perfoliata* which could be studied, no significant comparison could be made. For both stations, however, the general appearance was of a well-drained soil, the one a sandy kame moraine and the other an upland or sloping shale plain. A comparison of the associations of plants found where *U. perfoliata* was discovered by the author yields the following list of species common to the two sites:

TREES AND SHRUBS:

<i>Populus grandidentata</i>	<i>Hamamelis virginiana</i>
<i>Fagus grandifolia</i>	<i>Prunus serotina</i>
<i>Castanea dentata</i> ³	<i>Rhus radicans</i> var. <i>Rydbergii</i>
<i>Quercus alba</i>	<i>Acer saccharum</i>
<i>Quercus rubra</i>	<i>Viburnum acerifolium</i>
<i>Sassafras albidum</i>	

HERBACEOUS SPECIES:

<i>Botrychium virginianum</i>	<i>Hepatica americana</i>
<i>Pteridium aquilinum</i>	<i>Ranunculus abortivus</i>
var. <i>latiusculum</i>	<i>Thalictrum dioicum</i>
<i>Maianthemum canadense</i>	<i>Geranium maculatum</i>
<i>Trillium grandiflorum</i>	<i>Aralia nudicaulis</i>

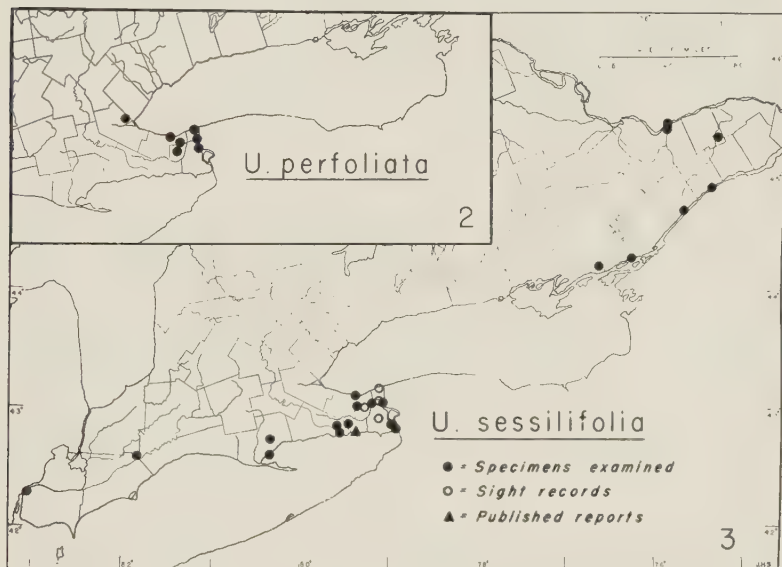
Among the species listed above are several which are at or near their northern limit in Ontario at the Niagara and Hamilton regions, such as *Castanea dentata* and *Sassafras albidum*. To these may be added the following, found at one or other of the two stations in Ontario for *U. perfoliata*: *Liriodendron Tulipifera*, *Cornus florida*, and *Swertia caroliniensis*. These southern species are restricted in Ontario to the so-called Carolinian Zone, the extreme southern portion of the peninsula of Ontario which lies between lakes Ontario and Huron. The stations for *U. perfoliata* shown on the map (fig. 2) represent the northwestern extension of the natural area of this species into a region of Ontario which contains a considerable number of southern species there reaching their northern limit in the province.

Finally, it may be noted that at neither of the two stations for *U. perfoliata* discovered in southern Ontario was *U. grandiflora* found in the same type of habitat. The latter species is common, however, throughout the same region. At the station between Waterdown and Aldershot the two species were growing in the same general area within three hundred yards of each other, but *U. perfoliata* was on well-drained wooded upland and *U. grandiflora* was in rich damp alluvial soil in the wooded stream-bed of a neighbouring ravine.

3. *Uvularia sessilifolia* L.—In Canada known from Nova Scotia, New Brunswick, Quebec, southern Ontario (see fig. 3), western Ontario (near the borders of Manitoba and Minnesota), and southern Manitoba. It is usually found in deciduous woods, frequently in rather dry, sandy, or grassy situations in open woods or clearings. The following are cited from the 45 sheets examined from the province:

³ Represented only by stump-sprouts.

ONTARIO: CARLETON: rich woods, Ottawa, June 9, 1878, *J. Fletcher* (TRT); open woods, Rideau River, lot 19, Junction Gore, Gloucester Tp., May 10, 1939, *W. H. Minshall* 9 (DAO). DUNDAS: dry island, Morrisburg, May 12, 1894, *A. H. D. Ross* (QU). ESSEX: Sandwich, June 5, 1901, [probably *J. Macoun*]⁴ (CAN, no. 13315). FRONTENAC: Cataraqui, May 27, 1896, *W. Nicol* (QU). GRENVILLE: Mirwin's woods, w. of Prescott, May 14, 1860, [probably *B. Billings*] (QU). HALDIMAND: edge of woods, near Port Maitland



FIGS. 2 AND 3. *UVULARIA PERFOLIATA* AND *U. SESSILIFOLIA* IN ONTARIO.

in Sherbrooke Tp., June 17, 1950, *Soper & Shields* 4709 (TRT). KENT: Bothwell, July 18, 1917, *M. Y. Williams* (CAN). LEEDS: Gananoque, 1939, *I. O'Driscoll* (DAO). LINCOLN: open woods, Vineland, May 18, 1940, *H. M. Harrison* (OAC). NORFOLK: lot 17, conc. VI, Charlotteville Tp., June 9, 1948, *M. Landon* (McM). RUSSELL: Casselman, May 16, 1891, *Wm. Scott* (TRT). WELLAND: Whirlpool, Niagara, May 24, 1898, *Wm. Scott* (TRT); woods near Crescent Beach, Bertie Tp., June 14, 1930, *C. A. Zenkert* (BUF); open woods near Wainfleet (Marshville), June 1, 1930, *C. A. Zenkert* (BUF); open grassy woods about three miles w. of Fort Erie North, May 20 & July 5, 1950, *Soper & Shields* 4398 & 4887 (TRT); Thorold, May 15, 1911, *M. O. Malte* (CAN).

This species was said to be common in Lambton County by C. K. Dodge (3), although no specimens have been seen from that area during the course of the present study.⁵

⁴ Deduced by a comparison of handwriting with that on labels of other specimens. *U. grandiflora* was collected at Sandwich by Macoun on the same day.

⁵ C. K. Dodge's herbarium at the University of Michigan does not contain a specimen of this species from Lambton County, Ontario, according to Dr. Rogers McVaugh (*in litt.*), although there is one there which was collected at Port Huron, Michigan, opposite Sarnia.

ACKNOWLEDGEMENTS

This study was carried out with assistance of a grant-in-aid of research furnished by the University of Toronto. Field work has also been supported by the University of Toronto, the Dominion Department of Agriculture, and the Research Council of Ontario. The author is indebted to the curators of the herbaria from which material was sent on loan for study. He also wishes to express his gratitude to Mrs. Margaret Heimbürger, who assisted greatly in the recording and plotting of the data.

SUMMARY

The identity and geographical distribution of *Uvularia grandiflora*, *U. perfoliata*, and *U. sessilifolia* have been discussed. Distribution maps show locations in southern Ontario from which these species are known and selected groups of specimens have been cited to give a record of sources of material for the counties and districts. The finding of one hitherto unreported station for the rare *U. perfoliata* in the Niagara district and of a second in the vicinity of Hamilton establishes the existence of this species, which apparently has not been collected in Ontario for nearly fifty years.

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⁶ This work (101 pp., not completed) is usually cited as having been published from 1888-1893, but the last section, pp. 78-101, containing the references to *Uvularia* and *Oakesia* was published on March 1, 1894, according to the date given on the paper cover of parts 11 and 12 (issued together) of volume 7 in the bound copy at the Legislative Library of the Parliament Buildings in Toronto.

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SOME NOTES ON UNITED STATES TREE NAMES

WILLIAM A. DAYTON

HEREWITH are some observations on the scientific names of the pines in Walter's "Flora Caroliniana" and in the so-called "Walter Herbarium" in London, as well as of knobcone pine, bristlecone fir, two oaks, and the Florida doveplum; also, on the significance of the name "loblolly pine."

THOMAS WALTER'S PINES

Thomas Walter, in his "Flora Caroliniana" (1788), briefly describes (p. 237) five species of pines, as follows:

- | | |
|---------------------|---|
| " <i>glabra</i> 1. | foliis geminatis, strobilo oblongo-ovato brevi, cortice glabro. |
| <i>squarrosa</i> 2. | foliis geminatis glabris brevibus, strobilo ovato brevi, squamis
subretrosum mucronatis, cortice scabro. |
| palustris 3. | foliis trinis sesquipetalibus, strobilo subulato, spinis adscen-
dentibus. |
| lutea 4. | foliis trinis pedalis, strobilo ovato-subulato, <i>spinis rectis</i> . |
| Cedrus? 5. | foliis, strobilo subgloboso squamis apice, <i>spinis</i>
<i>retrosum imbricatis</i> ." |

Walter's italic and roman type in the specific names above are not explained by his prefatory note: "Notam dubietatis ad nomen genericum ponere, et differentias typis italicis indicare, saepe contentus fuit"—which appears to be his only interpretation of his italicization.

In the above catalog *Pinus glabra*, *lutea*, and *squarrosa* appear to be new species and original publications by Walter. No. 3 undoubtedly is longleaf pine (*P. palustris* Mill.). His fifth

species, "*Pinus Cedrus*?" is indeed a puzzle. The blank space after "foliis" appears to indicate that Walter himself was not sure of the leaf characters and perhaps had only the cone. It seems unlikely that he had in mind the cedar of Lebanon (*Cedrus libanensis* Juss. ex Mirb., syn. *P. Cedrus* L.). Nor could it have been the Italian stone pine [*P. pinea* L., syn. *P. Cedrus* Uspenski (1834)]. Dr. Little has informally suggested that, because of the phrase "strobilo subgloboso," Walter may have had a pond pine (*P. serotina* Michx.) cone.

Pinus glabra Walt. is generally agreed to be the spruce pine of our southeastern coastal plain.

Pinus squarrosa Walt. is listed by Sargent (Silva of North America, Vol. 11. 1897), by Shaw (The genus *Pinus*. Arnold Arbor. Pub. 5. 1914), and by Rehder (Bibliography of cultivated trees and shrubs hardy in the cooler temperate regions of the northern hemisphere. 1949) as a synonym of shortleaf pine (*P. echinata* Mill.) and that is, with little question, the proper disposition of it.

Pinus lutea Walt. is listed in Index Kewensis (1894) and by Sudworth (Nomenclature of the arborescent flora of the United States. U. S. Dept. Agr. Bul. 14. 1897) as a synonym of longleaf pine (*P. palustris* Mill.). But Sargent, Shaw, and Rehder (*opp. cit.*) hold it to be a synonym of *P. taeda* L., loblolly pine. The latter treatment, despite Walter's use of "pedalibus" in describing the leaves, seems much the more plausible.

It may not be inappropriate at this point to comment on the common name "loblolly pine." Prof. Fernald¹ has published this etymology: "Loblolly Pine, from *loblolly*, a loutish, foolish or useless person." On August 18, 1948, I wrote Prof. Fernald (in part) as follows:

"With all proper and due respect permit me to question your etymology of the name 'loblolly' in American plant names—such as loblolly bay, loblolly pine, etc. I gravely doubt that the name has any connection whatever with 'a loutish, foolish or useless person.' The first definition of this word in the Oxford Dictionary is as follows: 'Thick gruel or spoon-meat, frequently referred to as a rustic or nautical dish or simple medicinal remedy; burgoo. Hence, a ship-doctor's medicines.' Whence such old nautical expressions as 'loblolly boy' (who would correspond roughly with

¹ Fernald, M. L., and Schubert, Bernice G. Studies of American types in British herbaria. Part III. A few of Philip Miller's species. RHODORA, 50: (596) 181-190. Aug., 1948.

a present-day pharmacist's mate of the U. S. Navy) and 'loblolly doctor' (a ship surgeon and physician). In the Craigie-Hulbert 'A dictionary of American English on historical principles' (published by the University of Chicago) loblolly is defined thus: '(1) A thick, gruel-like food. . . . (2) A miry puddle or mud-hole.' This dictionary cites (*inter alia*) from the Georgia General Assembly Acts: 219 (1760) this expression: 'Squared timber. . . . made of swamp or loblolly pine.' There we have it, I think, a vernacular expression (based on loblolly, gruel, etc.) for a thick-mucky or swampy place. Forest Service Circular 183, 'Forest Planting Leaflet. Loblolly Pine (*Pinus taeda*),' published 1910, says: 'Loblolly pine is a name which originated in Mississippi and Louisiana, and which designates the place of growth, loblolly being the local name for a thicket swamp.'"

On September 27, 1948, Prof. Fernald replied at length to my letter of August 18, and referred to my remarks on the name "loblolly pine" as follows: "I was very glad to have your detailed notes on the significance of the name 'loblolly.' I had depended too much on Sargent's statement." Fernald's reference to Sargent is, I assume: "Loblolly, a loutish or foolish person, nautically loblolly-boy or surgeon's assistant, is a nautical name for water gruel or spoon meat, and is applied to medicines collectively. It was early used in the West Indies as a plant name, and appears in Plukenet's *Almagestum Botanicum*, published in London in 1696 . . ." (Sargent, *Silva of North America* 1: 42. 1892).

As I was to be in London for a brief period in 1950, Dr. Elbert L. Little, Jr. of the U. S. Forest Service asked me to see if there is a specimen of longleaf pine (*P. palustris* Mill. or *P. australis* Michx. f.) in the Fraser volume of Thomas Walter's plants, upon which Walter's *Flora Caroliniana* was based in part; also if there is a specimen there which could be accepted as the type of *P. lutea* Walt. There are numerous references² in the literature to this Fraser folio 117-p. volume of Walter's plants in the British Museum of Natural History at South Kensington, London, and

² See, for example:

Gray, Asa. Notices of European herbaria, particularly those most interesting to the North American botanist. *Amer. Jour. Sci.* 40: 1-18. Oct.-Dec., 1840.

Hitchcock, A. S. The identification of Walter's grasses. 16th Ann. Rpt. Mo. Bot. Gard.: 31-56. 1905.

Blake, S. F. Some neglected names in Walter's *Flora Caroliniana*. *RHODORA* 17 (199): 129-137. July, 1915.

Britten, James. Thomas Walter (1740?-88) and his grass. *Jour. Bot.* 59 (699): 69-74. Mar., 1921.

Fernald, M. L., and Schubert, Bernice G. Studies of American types in British Herbaria. Part IV. Some species of Thomas Walter. *RHODORA* 50: 190-208, pl. 1103-1115. Aug., 1948.

a brief quotation from Gray³ (Vol. 1, p. 136) will serve as a sample:

"Saturday evening, February 9 (1839).—I have been engaged nearly the whole day upon the herbarium you [Torrey?] so much wished to examine, viz., that of Walter. I have not yet finished it, and find the examination very tedious, as the specimens are very often not labeled, except with the genus in his 'Flora,' so that I have first to make out his own species, and then what they are of succeeding authors.

"The specimens are mostly mere bits, pasted down in a huge folio volume. I suspect this was done by Fraser, and the labels have sometimes been exchanged, so that it requires no little patience. Some of the things I most wished to see are not in the collection, and there are several in the collection which are not mentioned in the 'Flora.' You [Torrey?] would laugh to see what some of the things are that have puzzled us: thus, for instance, his 'Cucubalus polypetalus' is *Saponaria officinalis*! His 'Dianthus Carolinianus' is *Fraseria*! in fruit. I will soon send you my notes on the collection, or a copy of them. Bentham looked over the Leguminosæ, Labiatae, etc., with me...."

In his paper "The confused bases of the name *Pinus palustris*" (RHODORA 50: 241–249. Oct., 1948) Prof. Fernald alluded (p. 247) to the desirability of a further study of Walter's pine material. On July 4, 1950, it was my good fortune to be able to visit the British Museum of Natural History and there Dr. George Taylor and Mr. Groves received me very courteously and were most helpful. I was permitted to look over the "Walter Herbarium." The pine material consists of four small mounts on p. 83, three at the bottom of the page and one above and to the left. Dr. Taylor has very kindly provided me with photographs of this pine material and these are shown (assembled) in Plate 1184. For convenience of reproduction here, the position of the left-hand specimen in Plate 1184 has been moved from its original one (immediately above the second specimen from the left, "P30") into alignment with it.

The left-hand specimen is about 15 cm. long; the rather slender leaves are in 2's and about 50–65 mm. long. The second specimen from the left ("P30") is about 18 cm. long; the twigs are slender and glabrous; the slender leaves are in 2's, about 50 mm. long, and more or less glaucous beneath. These two specimens are almost certainly *Pinus glabra* Walt., and perhaps should be considered the type material of that species.

³ Gray, Jane Loring. Letters of Asa Gray. 2 vols., 838 p., illus. Houghton Mifflin & Co., Boston and N. Y. 1893.

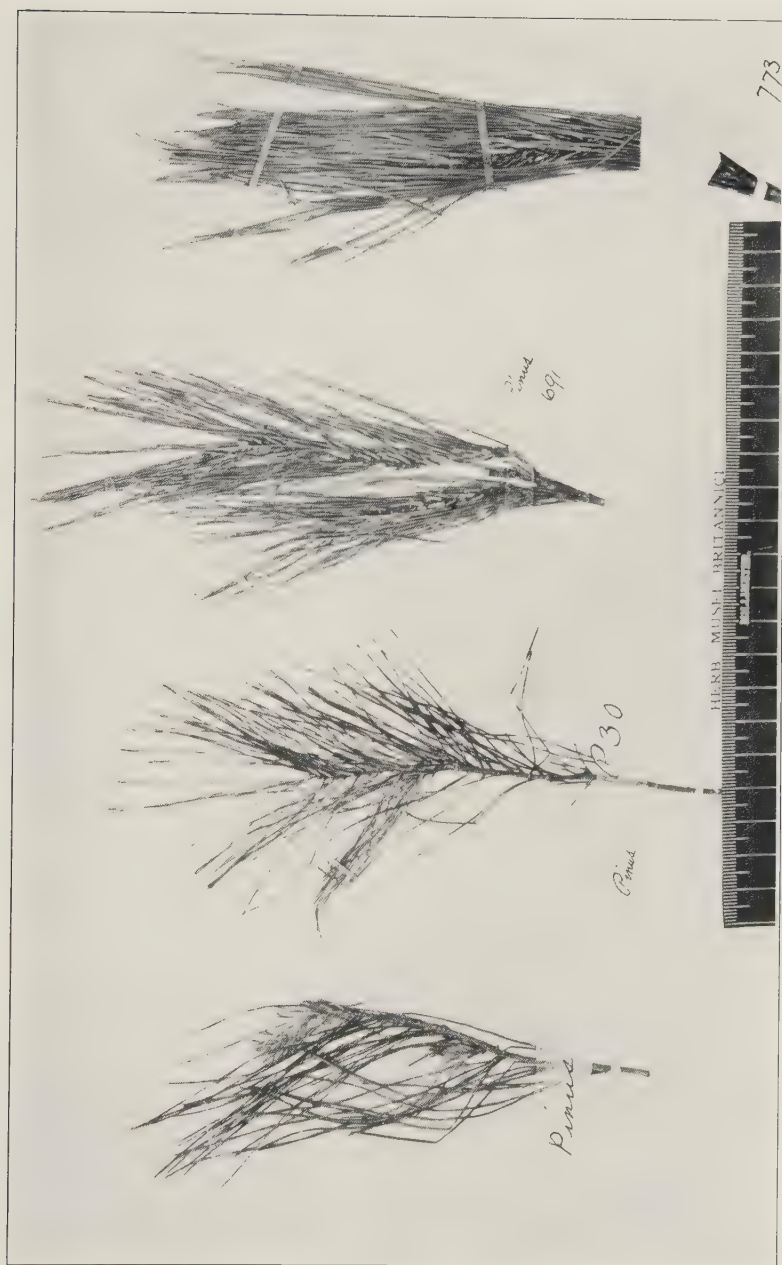


PLATE 1184. The four pine specimens in the "Walter Herbarium" in the British Museum of Natural History. The extreme left-hand specimen, for convenience of illustration, is shown out of its original position.

The third specimen from the left ("Pinus 691") is about 17 cm. long; the twigs are rather coarse; the leaves are in 2's, about 70 mm. long, coarser than those of the two specimens to its left and not at all glaucous. It is possible that this may be the type of Walter's *P. squarrosa*. The right-hand specimen ("773") is about 19.5 cm. long; the leaves are in 2's, about 110 mm. long and notably coarser than those of the other specimens. These two right-hand specimens (691 and 773) appear to me to be shortleaf pine (*Pinus echinata* Mill.).

Summary: The "Walter Herbarium," so far as pines are concerned, consists of four sterile fragments, all of 2-needled pines. Obviously the *Pinus lutea* and *P. palustris* of Walter's Flora Caroliniana are not represented. His *Pinus glabra* and *P. squarrosa* (the latter a synonym of *P. echinata*) are probably represented. I was not allowed to remove portions of the needles for later microscopical study. It is hoped that somebody in the British Museum may be induced to make that study, as the results might add appreciably to these preliminary findings.

PINUS CALIFORNIANA LOISEL. IN DUHAM.

Henri Louis Duhamel du Monceau's 7-volume folio work "Traité des Arbres et Arbustes que l'on cultive en pleine terre en Europe, et particulièrement en France" (1801-1819) appears to be very rare in libraries in this country. Some years ago Mrs. Janet R. Sellars, formerly of the Arnold Arboretum Library, kindly sent me a copy of the original description of *Pinus Californiana* Loisel. from Vol. 5, p. 243-244 of that work; she told me that Loiseleur-Deslongchamps was the author of Vols. 5-7 of the work mentioned. That description follows:

"15. *Pinus Californiana*. P. foliis geminis ternisve, gracilibus; strobilis folio multò longioribus.

"Je n'ai pas cru devoir négliger de faire connaître cette espèce, quoique le seul individu que j'aie vu au Jardin des Plantes n'eût ni fleurs ni fruit; la note qui m'a été communiquée par M. le professeur Thouin ne pouvant laisser de doute sur l'existence de ce Pin, comme espèce distincte. 'Cet arbre croît dans le voisinage de Monte-Rey, en Californie. Un des ses cônes, recueilli par Collignon,⁴ jardinier de l'expédition de la Peyrouse, fut

⁴ Presumably this is a slip for Collignon. See Guillaumin, A. Collignon, jardinier du voyage de La Perouse. [(Paris) Mus. Nat. Hist. Natur. Bul. (ser. 2) 20: 96-100. 1948.] Jean-Nicolas Collignon was born in Metz in 1762 and apparently was not heard of again after December, 1788. He disappeared in the South Pacific, after seriously injuring his right arm in an explosion; whether lost at sea, murdered by savages or dead from other cause "nul ne saura jamais."

envoyé au Muséum d'Histoire naturelle en 1787. Ce cône avait la forme de celui du grand Pin maritime, (*N.B.* I assume that *Pinus pinaster* Ait., syn. *P. maritima* Lam., is intended—W.A.D.) mais il était plus gros d'un tiers dans toutes ses dimensions. Sous chacune de ses écailles se trouvaient deux semences de la grosseur de celles du Pin Cembro, (*N.B.* Presumably Swiss stone pine, *P. cembra* L. is referred to—W.A.D.) et dont l'amande était bonne à manger. Ces graines, semées au Muséum, ont produit deux jeunes plantes, qui, cultivés dans l'orangerie, se sont conservés pendant long-temps. La plupart ont été donnés à des cultivateurs des départemens meridionaux. Il en existe encore un pied au Jardin des Plantes, placé depuis quelques années en pleine terre dans le lieu nommé la petite butte; sans être tres-vigoureux il se maintient en santé.' J'ajouterai que cet arbre a environ sept pieds de haut; que ses feuilles sont longues de trois pouces, très-menus, d'un vert peu foncé, et qu'elles sont réunies deux ou trois ensemble dans la même gaine."

Loudon (*Arboretum et fruticetum Britanicum*. 1838), under the heading "Species of 3-leaved pines which cannot with certainty be referred to any of the preceding section, but of which there are living plants in England," describes (p. 2268-2269): "31. *P. californiana* Lois. The California Pine," based on Loiseleur's description above, so that the matter is not further clarified unless, to be sure, the British specimens he mentions are still living and can be located.

In 1840 Hooker & Arnott (*Botany of the Beechey Voyage*, p. 393) give a check list of seven then known California pines, including besides bishop, Coulter, Digger, and Monterey pines (the last-named under three different botanical names): "5. *P. Californica*. Lois.—Loud. l. c. p. 2268. Hab. Monterrey. *Colladon*⁵—A very dubious species." Note the misspelling, *Californica*.

The writer's main concern with the name *P. californiana* Loisel. is in connection with what immediately follows.

KNOBCONE PINE

In July 1846 Hartweg was in Monterey and wrote⁶ that, in view of the hostilities between United States and Mexican troops, "I cannot venture far away from Monterey, nor is it advisable that I should do so, as I might fall in with a party of country people, who could not be persuaded that a person would come all the way from London to look after weeds, which in their opinion are

⁵ See footnote 4.

⁶ Hartweg, Theodor. XXIX.—Journal of a mission to California in search of plants. London Hort. Soc. Jour. 2: 187-191. 1847.

not worth picking up, but might suppose that I have some political object in view; I, therefore, confine my excursions within a few miles of the town." However, in later August of that year he had the good fortune of spending a day or two in the mountains across Monterey Bay near Santa Cruz where he discovered his *Pinus benthamiana* Hartw. (a synonym of *P. ponderosa* Laws.). He then adds this note (p. 189):

"Another kind of pine that I found within a few hundred yards of the foregoing species, is, probably, the doubtful and little known *Pinus californica*; the trees seem to be of slow growth, and do not attain any great height, seldom more than 25 feet by 8 inches in diameter. The leaves are in bundles of three, $4\frac{1}{2}$ inches long; cones 5 to $5\frac{1}{2}$ inches long by 2 broad, the outer surface curved, the inner straight, scales on the outer surface more developed, enclosing two small, flat, winged seeds. The cones are only produced on the main stem; when ripe, they are of a light-brown colour, and stand off at nearly a right angle; when old, of a silvery grey, pressing firmly upon the stem, and remain on the trees for a series of years without opening or shedding their seeds."

The above appears to be the first published description of knobcone pine, antedating the presently accepted scientific name of that species (*P. attenuata* Lemmon, Mining and Sci. Press **64**: 45. 1892 and Gard. and Forest **5**: 65. 1892) 45 years. It is true that Engelmann (in Brewer, Watson and Gray, Botany of California **2**: 128. 1880), adopts the homonymous *P. tuberculata* Gordon (1849) for knobcone pine, dismissing *P. californica* Hartw. as a *nomen provisiorium*, with the comment: "Hartweg's name of *Californica*, though much older, was applied only through a mistaken identification of the species with Loiseleur's plant above mentioned, and must therefore be dropped." Technically, no doubt, the Rules (Art. 37) may still be cited to support Engelmann's statement in this matter. However, *Pinus californica* Hartw. does not violate Art. 70 as it is not an "orthographic variant" of *P. californiana* Lois., the trivial adjective being a quite different one, and it is not a source of confusion, being certainly less so, say, than *Hieracium greenii* A. Gray and *H. greenii* Porter & Britton, both of which are legitimate. J. G. Lemmon (Notes on Cone-bearers of North-west America.—I. Garden & Forest **5**: 64–66. Feb., 1892) discusses *Pinus californiana* Lois., claiming that it should be accepted as the scientific name for Monterey pine, but, in an emendatory suffixed note, C. S. Sargent takes the position that the name is too uncertain.

A little later, Lemmon [Notes on West American Coniferae.—III. *Erythea* **1** (11): 224–231. Nov., 1893] writes that Monterey pine “is practically the only pine that would be noted for miles around (Monterey) except by keen-eyed botanists like Douglas and Coulter” but seems to agree with Sargent that *P. californiana* Lois. should be rejected. He also defends his name *P. attenuata* for knobcone pine as against *P. californica* Hartw.

Disregarding for the moment the rather specious and highly legalistic argument that Hooker & Arnott’s typographical error in the spelling of Loiseleur’s species makes *P. californica* Hartw. homonymous, and considering that Hartweg was the discoverer of knobcone pine and wrote an excellent description of it long before anybody else did, it seems to me that his name, even though tentatively given, has sufficient merit to make it worthy of consideration by the Executive Committee, to which the Rules indicate that “doubtful cases should be referred.”

BRISTLECONE FIR

It is a familiar fact that the name-bringing synonyms of bristlecone fir, *Pinus bracteata* D. Don and *P. venusta* Dougl. were both published in 1836 but priority between the two has not hitherto been established. Little [Notes on nomenclature in Pinaceae. Amer. Jour. Bot. **31** (9): 587–596. Nov., 1944] indicates that *Pinus venusta* Dougl. (Comp. Bot. Mag. **2**: 152. 1836) was published December 1, but adds that “the exact date has not been determined” for *P. bracteata* D. Don [Linn. Soc. London Trans. **17** (3): 442. 1836]. He concludes: “The name established in usage by Sargent more than fifty years ago [viz, *Abies venusta* (Dougl.) K. Koch—W.A.D.] should be retained for the present.” Keck [Bibliographic notes on *Abies bracteata* and *Pinus Coulteri*. Madroño **8** (6): 177–179. Apr., 1946] challenged Little’s conclusion, claiming an 1832 date for *Pinus bracteata* D. Don in Lambert. Little rebuts Keck’s argument in his paper “Lambert’s ‘Description of the genus *Pinus*,’ 1832 edition” [Madroño **10** (2): 33–47. Apr., 1949]. He states that *Pinus bracteata* was not published in 1832, and that the name appears in extra pages of two known copies only, somewhere between 1837 and 1839, as shown by watermark dates. He again recognizes *Abies venusta* (Dougl.) K. Koch as the acceptable scientific name for

bristlecone fir but adds: "However, if the exact date of publication in 1836 of part 3 of Volume 17 of the Transactions of the Linnean Society of London should ever be established as before December 1, as is mathematically probable, then it would be necessary to take up the name *Abies bracteata* (D. Don) Nutt.

No. 377. **ESTABLISHED UPWARDS OF THIRTY YEARS.**
BENT'S MONTHLY LITERARY
ADVERTISER

LONDON, JULY 11, 1836.

NEW PUBLICATIONS, *From June 9, to July 9, 1836.*

Tattersall's (Geo.) Lakes of England; post 8vo, 12s.
 Taxæ Sacre Penitentiariæ Apostolicæ, 12mo, 3s.
 Thornton's Treatise on the Teeth and Gums, 8vo, 2s 6d.
 → Transactions of the Linnean Society, Vol. 17, Pt. 3, 6to, 1l 1s.
 Tribunal of Manners, a Satyricon, post 8vo, 5s.
 Trollope's (Mrs.) Life and Adventures of Jonat. J. Whitlaw, 3 vol. post 8vo, 31s 6d.
 Twamley's Romance of Nature; or, the Flower Season illustrated, 8vo, 31s 6d.

FIG. 1. A portion of Bent's Monthly Literary Advertiser, No. 377, for July 11, 1836, showing the date of publication of Vol. 17, Pt. 3 of The Transactions of the Linnean Society of London.

On July 4, 1950, which obviously is no holiday in Britain, it was my privilege to visit the headquarters of the Linnean Society in London. There Mr. Spencer Savage, the Librarian and Assistant Secretary, very kindly showed me the famous collection of Linneana—his letters, manuscripts, library, herbarium, shells, etc. There is no record there of the *exact* date of *Pinus bracteata* D. Don, but I did find this interesting handwritten note in their records of Part 3, Vol. 17 of the Society's Transactions: "At end of June or beginning of July. Council Meeting 21 June 1836 the price of the Part was fixed (at £1/1). In Monthly Literary Advertiser 1836. No. 377 p. 84 the Part is recorded as on the market. J.S." Through the kindness of Messrs. C. B. Oldman, Principal Keeper, Department of Printed Books, and L. C. Punter of the Photographic Service, British Museum, I have obtained a photostatic copy of Bent's Monthly Literary Advertiser (No. 377. July 11, 1836), which (because of its great rarity or perhaps entire absence in American libraries) is partly reproduced in Fig. 1 herewith, showing that Vol. 17, Part 3, of the

Transactions of the Linnaean Society was issued sometime between June 9 and July 9, 1836. It is obvious, therefore, that *Pinus bracteata* D. Don has about five months or so priority over *P. venusta* Dougl., and that the correct botanical name of bristlecone fir is *Abies bracteata* (D. Don) Nutt., as Dr. Little surmised (*loc. cit.*, Madroño), and as Dr. Keck indicated (*op. cit.*) though on another premise.

TWO OAKS

Quercus × **hawkinsi** Sudw., Amer. Forestry 23: 685, illus. 1917.

In the 1944 processed Forest Service Check List⁷ I called attention to the fact that the spelling of the trivial name should be corrected to *hawkinsiae*, the late Mr. Sudworth having said in his original description: "It is proposed to designate this hybrid oak . . . in honor of its discoverer, Mrs. Eugene Hawkins," whose picture he furnishes by the side of the type tree in Carroll County, western Tennessee.

It might be explained that the Check List referred to was prepared by Dr. Elbert L. Little, Jr., under the supervision of the Forest Service Committee on Tree and Range Plant Names whereof Dr. Homer L. Shantz was then chairman. Dr. Little, who had been with the Ecuador forest survey party in 1943, under the auspices of the Nelson Rockefeller Office of Inter-American Affairs, was transferred late in the year to the Cinchona survey project in Colombia and, Dr. Shantz having retired, the Check List mss. was entrusted to me. It was necessary for me to obtain answers to questions Dr. Little had entered on the mss., to proofread the stencils, and to prepare an introduction and the indexes. In the course of proofreading the stencils it seemed desirable for me to intercalate 37 notes, among which was the note on this oak hybrid.

The original spelling *hawkinsi* seems to be "a clearly unintentional orthographic error" subject to correction under Art. 70 of the Rules. Prof. Fernald has accepted this correction in the eighth edition of Gray's Manual (1950). This hybrid occurs under the name "× *Q. hawkinsii* Sudworth" (p. 28) in Ernest J.

⁷ Little, Elbert L., Jr., and U. S. Forest Service Tree and Range Plant Name Committee. Check list of the native and naturalized trees of the United States, including Alaska. 325 p. Mimeogr. 1944.

Palmer's "Hybrid oaks of North America" [Arnold Arbor. Jour. 29 (1): 1-48. Jan., 1948]. Prof. Rehder adopted the name *Q. × porteri* for this cross between black and northern red oaks in his Manual and also in his "Bibliography of cultivated trees and shrubs" (1949) but, as Dr. Little has indicated in the Check List, *Q. × hawkinsiae* antedates the valid publication of *Q. × porteri*.

Quercus virginiana* var. *eximea Sarg., Bot. Gaz. 65: 447. 1918.

Again, in the 1944 mimeographed Forest Service Check List, I indicated that the above varietal name should be changed to *eximia*, under Art. 70, as either a typographic or unintentional orthographic error. I have discussed this matter with Prof. George M. Harper, Jr., chairman of the classical department of Williams College, who states that there is no authority for the spelling *eximeus*, -a, -um. Incidentally, it seems to be a fairly common (and unhappy) botanical practice to employ *exiguus* and *eximius* as synonyms of *angustus* ("narrow"); *exiguus* means "scanty"; *eximius* (literally, "taken out") signifies "distinguished," "extraordinary."

FLORIDA DOVEPLUM

Coccoloba laurifolia Jacq., Plant. Rar. Hort. Caes. Schoenbrun. 3: 267. 1798.

In the 1944 Forest Service Check List above referred to, Dr. Little followed the traditional practice of placing the doveplum of southern Florida under the above name. In a note on that species (p. 71) I stated that, before a final revision of the Check List was made, "it is desirable that, so far as possible, the relationship of *Coccoloba laurifolia* Jacq., whose type locality is Caracas, Venezuela, to the Floridian species, *C. floridana* Meisn. (in DC., Prodr. Syst. Regni Vegetab. 14: 165-6. 1856) and *C. curtissii* Lindau (in Engler, A., Bot. Jahrb. 13: 159. 1890) should be inquired into. This may, of course, for final solution, require study of type material, presumably in Europe, and further field study. It is quite possible, indeed, that true *C. laurifolia* does not occur naturally in Florida. Jacquin and Meisner (*opp. cit.*) indicate that *C. laurifolia* has included stamens; *C. floridana* is described with exserted stamens. Leaf shape and the presence or absence of teeth on the staminal tubes of these forms are

among other matters that need further study. Mr. E. P. Killip of the U. S. National Herbarium agrees with me that the present knowledge concerning the relationship of these forms is unsatisfactory."

Little [Nomina conservanda proposals for ten genera of trees and shrubs. *Madroño* 7 (8): 240-251. Oct., 1944] proposed *Coccoloba* P. Br. for conservation, chiefly on the ground that most authors are using that name, and this was approved by the nomenclature committee of the American Society for Plant Taxonomists though not formally ratified by the International Congress in Stockholm in 1950.

It may be worthy of note that the U. S. National Museum Florida material of "*C. laurifolia*" is now placed in folders labeled *C. floridana*. Unfortunately the South American material of *C. laurifolia* is, at this writing, not on file in that herbarium. If one compares the original descriptions of *C. laurifolia* Jacq. (*Plant. Rar. Hort. Caes. Schoenbrun. Descr. Icon.* 3: 267. 1798) with that of *C. floridana* Meisn. (*op. cit.*) and Jacquin's plate (267) with that, say, of Sargent (*Silva of North America* 6: 119-120, tab. 300. 1894) some noteworthy differences will be observed. For example, Jacquin's figure of his type of *C. laurifolia* shows a plant with leaves of an oblong type, whereas Sargent's plate of Florida "*C. laurifolia*" has leaves narrowed at the base and of a narrowly obovate or oblong-obovate type, and this agrees substantially with Meisner's description of his *C. floridana*. Admittedly, however, size and shape of leaves in this genus are variable in the same species. Moreover, *C. floridana* is described with leaves less rigid, the reticulations less prominent, and with the margins recurved as compared with those of *C. laurifolia*. *C. floridana* also was described with exserted stamens and included styles, whereas *C. laurifolia* was described with included stamens and exserted styles. The calyx of *C. laurifolia* is reported to be rounded at base and that of *C. floridana* attenuated, its pedicels noticeably more often in pairs and it is described as a considerably larger tree than *C. laurifolia*, and there appear to be other minor described differences.

To Richard A. Howard [The genus *Coccoloba* in Cuba. *Arnold Arbor. Jour.* 30 (4): 388-424. Oct., 1949] appears to belong the credit of first calling attention to the fact that this

genus is dioecious. He says (p. 389): "In all specimens examined in the field the plants were found to be dioecious and the staminate and pistillate plants are readily distinguishable." For example, Sargent (both in his *Silva* and the *Manual*) describes the flowers as "unisexual." Howard's findings would seem, therefore, completely to set aside the exerted *vs.* included stamens and styles stressed by other authors. Howard remands *C. floridana* Meisn., *C. curtissii* Lindau, and the "*C. laurifolia*" of authors to synonymy under *C. diversifolia* Jacq. He was not able to make final disposition of *C. laurifolia* Jacq., but thinks it may yet perhaps prove to be a synonym of the earlier-published *C. diversifolia* Jacq. Certainly, taking Jacquin's original description and plate of *C. laurifolia* it seems to key clearly to *C. diversifolia* in Howard's key. Apparently, therefore, our Florida doveplum is better placed under the name *C. diversifolia* Jacq.

RHUS

Rhus copallinum L., Sp. Pl. 266. 1753.

It is a familiar observation that Linnaeus' genders under *Rhus* are confused. Possibly this may be correlated with the fact that the ancients regarded Sicilian sumac (*Rhus coriaria* L.)—an important tanning plant of the Mediterranean region and Near East and which was the species of *Rhus* known to them—as two-sexed, male and female. Ρόϋς in Greek and *Rhus* in Latin may be either masculine or feminine. But in modern botany *Rhus* is uniformly treated as a feminine noun. The simplest procedure relative to *Rhus copallinum* seems to be to regard "*Copallinum*" in *Species Plantarum* as a typographical error for *copallinum*, which should now be feminized as *copallina*. *Rhus copallina* is, in fact, the spelling generally adopted by present-day botanists.

I wish to express my appreciation of Dr. Little's kindness in reviewing the manuscript of this paper and giving me the benefit of his criticism.

U. S. DEPARTMENT OF AGRICULTURE FOREST SERVICE,
WASHINGTON, D. C.

AN OLD LOCAL HERBARIUM OF NEW SALEM,
MASSACHUSETTS

UNA F. WEATHERBY

IN the summer of 1947 my husband Alfred and I accidentally met a Mr. Gregory Smith and were given an old herbarium which had belonged to his great uncle of whom he knew little except that he had lived and died in New Salem, Massachusetts, and for sixty years or more had practiced medicine there and on his professional rounds had become interested in the flora of the region and had made a collection of the plants.

The New England Botanical Club Herbarium specializes in local flora and to get an herbarium of a very local place of a region most of which is now under water seemed desirable and Alfred said if there was sufficient data the Club would like it. Later in the fall we went down, saw the herbarium, which was mounted on newspapers sewed into a book. The specimens had been very carefully pressed and mounted and there seemed to be enough data to make it worth while so we brought it home.

Mr. Smith could give us very little information about this uncle and it seemed we had an herbarium made by Dr. George Peirce, who lived in New Salem for most of the 19th century, but that was all. [The plants were dated from around 1840 to 1850.] Alfred being of an investigating mind and above all things desiring accurate information set about to find out more about Dr. Peirce and the precise source of his herbarium specimens.

The first thing we did was to go to New Salem and make inquiries. We couldn't find any one who had known him but almost every one knew about him. Evidently he had been a doctor of reputation—locally at least. We spent a morning in the old cemetery reading every stone with a Peirce on it, and there were many, about half of them, but unfortunately there was no George Peirce. We went to all the nearby towns and investigated their cemeteries but without success. Finally we found a lady who was in charge of the little local museum in which a few mementoes of Dr. Peirce were kept also a picture of his house. He never married so had no direct heirs. We were given the name of a niece of his living in Petersham. From her we secured

the following information: George Peirce was born Feb. 5th 1808, son of Rev. Warren Peirce and Lydia Farrer, his wife. Died Oct. 14th 1896. Aged 88 years 8 months and 9 days. The unusual spelling of the name is doubtless due to the fact that they were descended from Lord Percy, hence the e before the i "as occurs in those of Irish origin."

Alfred spent many evenings at the Gray Herbarium carefully removing the specimens from the old newspapers and had labels printed and the data ready for mounting. He said to me "The old Doctor took great pains to make and press such good specimens I do want them preserved." Alfred was also writing it up for RHODORA and a few days before his death he said to me: "I have finished the Peirce article but think I'll keep it and add the names of the plants."

Professor Fernald wanted it for the next issue of RHODORA and days were spent trying to find the manuscript but it has never been found so I am doing the best I can to replace it. A letter from the above mentioned niece, Mrs. Mabel Coolidge and Alfred's reply will give all the information I have.

COOLIDGE

"Lydford Fels"

Petersham Massachusetts Sept. 29th. 1947

Mr. C. A. Weatherby:—

My dear Sir:—

Your letter seems almost too incredible to believe, as I well remember Uncle George's herbarium kept on my mother's bureau waiting to be sent according to his directions when he had no more use for it! I knew he died and it was sent while I was away from home, some fifty years ago! and I thought that was the last of it until we were preparing for a scrap drive two years ago, and overhauled every available band-box and drawer and I found the key to that herbarium which was no use to us with its principal gone. I cannot imagine why my mother didn't send it along unless it did not come to light until she had forgotten about it . . . I did find the letter of instruction for sending it . . .

I know that my mother's uncle did a marvelous work as physician during an epidemic of typhoid fever in New Salem in the summer of 1859—resulting from the stagnant waters of Miller's River in Athol and Orange, and I suppose he spent most of his life in New Salem.

He was a very gentle and patient man greatly loved by his family and fellow townsmen, and I am gratified if some of his handiwork is still in existence. . . .

Yours truly,

Mabel A. Coolidge

Dear Mrs. Coolidge:—

I have been away for a month, moving about and getting mail only occasionally; that must be my excuse for having been so long in acknowledging your kind letter of September 29th, in regard to Dr. Peirce.

I am really delighted to have the information in regard to him which you give me and the pleasant picture of the man which emerges from what you and the people at New Salem have told me. If the key to the herbarium turns up, I shall be much pleased to have that too, for in some cases the information in regard to the specimens which we need for scientific purposes is lacking, and the key might supply it.

Yes, the herbarium was given to us by Gregory Smith, now, as you very likely know, an artist at Old Lyme, Connecticut, and quite accidentally. Mr. Smith was in charge, last summer, of the exhibition of the Old Lyme Art Association, which my wife (who is interested in art) and I are in the habit of visiting. In conversation with him the fact that I am a botanist was casually mentioned; he then told me of the herbarium which he had kept out of sentiment, but now felt, since none of his family were interested, that, if it were of any use, it should be placed in some institution. It proves to be an excellent collection, comprising a good representation of the flora of New Salem beautifully pressed and mounted and accurately named. Some of the specimens are from localities now under the waters of the Quabbin Reservoir.

The collection probably was made between 1840 and 1850; the style and paper of the book and the fact that he obviously used in naming his plants works of John Torrey, the latest of which was published in 1843, indicate that. Had they been worked up much after 1850 he would almost certainly have used Gray's or Wood's manual.

With my hearty thanks,

Sincerely yours,

C. A. Weatherby.

Mr. Weatherby died before the work was completed but Mr. F. W. Hunnewell has recently had the plants mounted and at long last, after a hundred years, the painstaking work of an amateur botanist has come to rest in a place where it may be useful.

FLOWERING ARUNDINARIA GIGANTEA IN ILLINOIS.—Botanists and plant collectors are aware of erratic and infrequent flowering of *Arundinaria gigantea* (Walt.) Muhl.; a species of cane usually found in lowland areas which may be flooded annually. During early July 1951 the writer visited an area west of Sandusky in Alexander County, Illinois, in which two colonies of cane were observed. In this locality *A. gigantea* produced short, leafy, flowering culms profusely, but another colony about 500 yards distant showed no flowering culms.

According to some authorities each species of cane has been thought to flower at the same time over considerable areas. With this prevalent idea in mind a visit was made to other localities in Gallatin, Pope, Massac, and Pulaski counties in which *A. gigantea* grows. None of the localities explored showed colonies with flowering culms.

Temperatures in this southern portion of Illinois were far below normal during the past winter. Most upper portions of the cane are dead, and such a killing back of sterile branches was very likely caused by sub-normal winter conditions. Mrs. Agnes Chase, in a communication, reported a collection of flowering culms of *A. tecta* (Walt.) Muhl. in southeastern Virginia where "the canebrake had been cut through to make a road, and the canes along the cut had sent up great numbers of the flowering basal shoots." When flowering culms were first observed in the Alexander County locality it was thought that killing of the upper parts of sterile branches might have induced abundant production of flowering culms in other southern Illinois areas, but observation has revealed that this is not the case. Throughout its range in Illinois *A. gigantea* has not flowered simultaneously this season. Destruction of sterile shoots is evidently only one of the factors which causes flowering. It will be interesting to keep this same locality and colony under observation during subsequent years, and to report on its behavior.

Specimens of flowering *A. gigantea* from the Alexander County locality have been deposited in herbaria of the following institutions: (No. 7214) Illinois State Museum, University of Illinois, United States National Herbarium, Chicago Natural History Museum, and (No. 7266) Gray Herbarium.—GLEN S. WINTER-RINGER, ILLINOIS STATE MUSEUM, SPRINGFIELD, ILLINOIS.

ARIZONA FLORA¹.—While residents of many of our states have no manual or other guide-book devoted to the plants growing within the borders of their states, the people of Arizona are fortunate in having several. Treating special categories of plants are *The Cacti of Arizona* by Lyman Benson, and a *Manual of Southwestern Desert Trees and Shrubs* by Benson and Robert A. Darrow, both excellent sources of information. Discounting

¹ *Arizona Flora*. By Thomas H. Kearney, Robert H. Peebles, and collaborators. viii + 1032 pages, 45 photographs on 32 pages, colored frontispiece. University of California Press. Berkeley, 1951. \$7.50.

the hastily compiled and unsatisfactory *A Flora of Arizona and New Mexico* by Ivar Tidestrom and Sister Teresita Kittell, the standard work on the flora of the state as a whole has been *Flowering Plants and Ferns of Arizona* [now out of print] by the same authors as the book under review. The present volume is largely a revision, on a rather broad basis, of the earlier work. Aside from changes in type-style, format, method of literature citation, indexing, etc., which are incidental and of no great importance to the quality of the work itself, the new book possesses some marked deviations from the older volume. The most significant of these appears to have resulted from a continuing interest and study of the flora by the authors during the period between publication of the two books. In the present work, one family, thirty-two genera, and one hundred ninety species are added to those included in the older publication.

A very adequate glossary is a new feature of the present volume. There are some excellent new photographs which are added to a number from the earlier work to form a single section of the book. Although this arrangement is less desirable than having the photographs in their logical position as determined by the related printed matter, the photographs were undoubtedly placed together as a measure of economy in book-manufacture. Appropriately enough, since the Malvaceae have been the special study of Dr. Kearney for many years, a colored photograph of *Sphaeralcea ambigua* against the background of an Arizona landscape is reproduced as the frontispiece. *Arizona Flora* is obviously the product of sound research and scholarship. It will be found by those interested in knowing about the plants of the southwest to be superior to its predecessor for that purpose.—R. C. ROLLINS.

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* Out of print.